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The Effects of Corporate Governance Mechanisms on The Financial Leverage- Profitability Relation: Evidence from Vietnam

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Abstract

This article investigates the moderating effects of corporate governance mechanisms on the - profitability relation in emerging market firms. Analysing the panel dataset of 295 listed firms in Vietnam in the period 2011-2015, this paper finds the evidence for the significant and positive effect of board size, board independence and state ownership on the financial leverage - profitability relation. The effect CEO duality on the financial leverage - profitability relation tends to be negative and the impact CEO ownership inclines to be positive although both of them are statistically insignificant. The results are consistent across different estimation methods. The study offers insight into how the corporate governance mechanisms alter the effect of financial leverage on the firm's performance and how the lack of consideration of the corporate governance mechanisms as moderating factors could be the reason for the inconsistent findings in the previous studies.

Keywords: Financial leverage, corporate governance, profitability, emerging markets, Vietnam.

1. Introduction

Despite the vast amount of literature of financial leverage, there has been no consent to a single generalised theory as well as no consistency in empirical findings. Many theories have evolved to explain the financial leverage-performance relation. Empirical literature reports different results and explains various rationales in this respect; some find positive leverage-performance relation while others reveal the adverse effect of debt. The reason behind such contradictory and inconsistent results is contingency and situational factors (O'Brien, 2003; Jermias, 2008). O'Brien (2003) suggests that literature studying the direct financial leverage-performance relationship should include situational and contingency factors in the study to avoid misleading conclusions. The magnitude and direction of financial leverage-performance relation can change due to moderating factors. Thus, it is critical to consider moderating factors while studying financial leverage performance relation.

Under a good corporate governance mechanism, the agency problem can be minimised, so the use of debt financing may be effective (Ferri and Jones, 1979; Jensen, 1986). In other words, corporate governance mechanisms may influence the financial leverage-performance relation. However, the possible moderating effect of corporate governance mechanisms on the effectiveness of debt use has received little attention.

To bridge this gap, we examine the effects of various corporate governance factors on the financial leverage- performance relation of firms in an emerging economy. The rationale for focusing on emerging market context is that laws and regulations regarding accounting requirements, information disclosure, securities trading are either absent or inefficient, so corporate governance instruments that work in developed countries may not operate as intended in emerging economies (Young et al.,2008). The agency problem (i.e. interest conflicts between shareholders and managers) is arguable to prevalent and hence may affect the effectiveness of managerial decision on debt using (Dharwadkar *et al.*, 2000).

We chose Vietnam as an empirical context for this study. This country reveals the typical characteristics of an emerging market with rapid economic growth and an immature legal system (World Bank, 2018). During the last two decades, Vietnam's capital market has significantly developed. From only two companies listed in 2000; now Vietnam's security markets have over 700 listed companies of which 23 have a market capitalisation of over USS 1 billion in 2017 (Vietnamenet, 2017). We use the data of 295 public firms listed in stock markets in Vietnam for the period 2011-2015. We employ the two-stage least square instrumental variable (2SLS IV) to analyze the data as a baseline model and general moment method (GMM) for robustness check.

The rest of this paper is divided into four sections. In section 2, we review theories and empirical literature to develop hypotheses. A research methodology is presented in section 3 and findings are reported in section 4. We discuss our research findings in section 5 and conclude the paper with our arguments about our contributions to literature and practice in section 6.

2. Literature Review and Hypotheses

2.1.Financial leverage

Financial leverage is defined as an extent to which a business relies on borrowed capital (Raymar, 1991). The theoretical literature on financial leverage consists of two conflicting views on the effect of debt financing. One strand of literature proposes benefits of debt such as tax advantages of debt (Modigliani and Miller, 1963), the choice of debt level as a signal of firm quality (Ross, 1977), agency costs of debt (Jensen and Meckling, 1976), and the advantage of debt in restricting managerial discretion (Jensen, 1986) and informational role of debt (Harris and Raviv, 1990).

In contrast, the other literature strand suggests the negative effect of debt which is caused by the financial distress cost (Kraus and Litzenberger, 1973; Kim, 1978). The debts obligate firms to pay periodic interest which limits working capital for the business's operations (Sarkar and Sarkar, 2008). It is also difficult to obtain additional debts in the case of high leverage (Le and O'Brien, 2010). As a result, the shortage of working capital could prevent firms from grasping some profitable investment opportunities.

Empirical research also reports inconsistent findings of the effect of financial leverage on firm performance. It is noticeable that most of the research using data of emerging economy firms find a negative effect. For instance, the negative effect is reported in Detthamrong et al. (2017) which use the data of Thai firms, in Vo and Ellis (2017) which employ Vietnamese firms' data, in Kimathi et al. (2015) that use the data of Keynia firms, Salim & Yadav (2012) using data of Malaysian listed firms, Le & O'Brien (2010) based on data of Chinese listed firms.

O'Brien (2003) and Jermias (2008) explain that inconsistent findings in the existing literature exist because of the lack of consideration of situational and contingency factors. Such situational and contingency factors potentially moderate the financial leverage- performance relation. After O'Brien (2003) and Jermias (2008), later research pays more attention to such situational and contingency factors. Specifically, Vithessonthi & Tongurai (2015a) examine the moderating effect of firm international orientation on the financial leverage-performance relationship while Vithessonthi & Tongurai (2015b) investigate the moderating effect of firm size. It is worth to note that apart from Vithessonthi & Tongurai (2015a,b) that use the context of Thailand, research examing the financial leverage-performance using emerging market contexts rarely consider situational and contingency factors relationship. Most of the research using emerging market context focuses on the direct effects of financial leverage as well as several other corporate governance factors on firm performance.

In the context of Vietnam, Vo and Ellis (2017); Cuong (2014) are among few studies about the effect of financial leverage on firm performance and none examines the moderating effect of corporate governance factors. Different from the previous research on the financial leverage-performance link, in this paper, we focus on how various corporate governance mechanisms can strengthen or weaken the effect of financial leverage on profitability.

2.2.Corporate governance

Corporate governance (CG) is broadly defined by the OECD (2001) as a set of relationships between a company's board, its shareholders, and other stakeholders. More specifically, it is a system by which a corporation's stakeholders exercise control over corporate management and protect the interests of shareholders (John and Senbet, 1998). Dharwadkar *et al.* (2000) suggest board structure (e.g board size, board independence and CEO power also referred as CEO duality) and ownership structure (e.g state ownership) as key characteristics of corporate governance in emerging markets. Although there is a huge amount of research that includes the most recent research using emerging market contexts, examine the direct effect of these corporate governance factors on firm performance, no conclusive findings have been reached.

For instance, with respect to board independence, its positive effect on firm performance can be found in Jackling & Johl (2009) which employs the data of Indian firms, in Liu et al. (2015) using the data from China, while the negative effect is reported in Shukeri et a. (2012) that use the data from Malaysia, in Darko et al.(2016) which use the data from Ghana. Insignificant effect of board independence is reported in Kyereboah-Coleman & Biekpe (2006) and Rashid et al. (2010) that use the data from Bangladesh.

A similar situation happens with empirical findings of the effect of board size, some studies report its positive effect on financial performance such as Kyereboah-Coleman & Biekpe (2006) using the data from Ghana, Shukeri et a.(2012) that use the data of Malaysian

firms while others find the negative effect (e.g Mak & Kusnadi, 2005 which employs the data from Malaysia and Singapore; Kumar & Singh, 2013 that uses the data from India).

In the same circumstance, CEO duality is found to have a positive effect on firm performance in Tian and Lau (2001) and Peng et al. (2007) that both use the data of Chinese firms as well as Ramdani & Witteloostuijn (2010) that use the data from Indonesia, Malaysia and Korea while the negative effect is evidenced in Yan Lam & Kam Lee (2008) using the data of Hong Kong firms and in Dogan et al.,(2013) that employs Turkish firms' data. The insignificant effect is reported in Shukeri et a. (2012) and Kyereboah-Coleman & Biekpe (2006).

Regarding the ownership structure, there is also an extensive body of literature on the relationship between ownership structure (e.g CEO ownership, family ownership, state ownership) and firm performance but the findings are mixed. Ciftci et al (2019) using the data from Turkey reports positive effect of foreign ownership on firm performance. Jiang et al. (2008) and Liao and Young (2012) using the data from China found the positive effect of state ownership while the negative is found in some other which also use the data of Chinese firms (e.g Lin et al., 2009, Tran et al.,2015) or a U-shape of state ownership on firm performance (Tian and Estrin, 2008; Yu, 2013).

In brief, the existing literature on corporate governance, despite its insights, has largely focused on the direct relationships between corporate governance factors and firm performance. Left unanswered is the question: How do the corporate governance factors influence the effectiveness of other instruments such as financial leverage and so further influence firm performance? In the following part, we will discuss how corporate governance instruments moderate the effect of financial leverage on profitability.

The moderating effect of board size

A corporate board (also known as a board of directors) is considered as one of the primary internal corporate governance mechanisms (Kumar & Singh, 2013). The corporate board has important roles such as design and implementation of strategy, monitoring the performance, and activities of the top management (Jensen and Meckling, 1976), manage and control the management of the company and fostering links between the firm and its external environment (Ruigrok et al.,2006). A larger board leads to an increased pool of the knowledge and intellect of directors that can be utilized for making profitable decisions (Dalton et al., 1999). The larger number of directors on the board also enhances the firm's ability to form greater external linkages (Goodstein et al., 1994) and obtain favourable funding sources and maximize the profitability of investment projects. Such benefits brought by a larger number of directors on board are particularly important in an emerging market context where formal capital market is not well established and functioned and firms are highly reliant on debt financing. Hence, we propose that:

> ***Hypothesis 1***. *Board size positively moderates the effect of debt financing on the profitability of public firms in emerging economies.*

The moderating effect of board independence

According to agency theory (Jensen and Meckling, 1976)[1], the use of IDs can address the agency problem by providing oversight of the strategic direction of the firm and scrutinising the performance of managers. More IDs on board may provide better overseeing of the firm's financial reporting process (Anderson et al., 2004). Beasley (1996) find that the proportion of IDs on the board is inversely related to the likelihood of financial statement fraud. Without oversight of independent directors, the managers of emerging market firms may foresee an easy

[1] Jensen and Meckling (1976) conceptualises that people are rooted in economic rationality, and thus the ownership structure at publicly traded corporations provides incentives for managers (agents) to act in a self-interested and opportunistic manner rather than for the benefit of the shareholders (principals).

chance to manipulate financial statement and hence incline to borrow and invest in projects beneficial to their self-interest rather than to firms (Kochhar, 1996; Le and O'Brien, 2010).

With a high presence of IDs, the managers of emerging market firms would be subject to high scrutiny and therefore be more rational in making investment decisions from the borrowed money. The independently monitoring role of IDs ensures the transparency and effectiveness of debt usage (Peng, 2004; Mura, 2007).

Moreover, the expertise and external relationships which IDs hold may help managers to improve the outcomes of the investments made from borrowed money. Bringing in more outside directors may facilitate firms' borrowing (Mizruchi and Stearns, 1994). IDs' external relations can help the firm obtain favourable loan terms. More capital with a lower cost of financing for investment is likely to generate higher profitability. Therefore, the more IDs on board are the more likelihood of obtaining favourable conditions for borrowed money and the more rational decisions relating to debt use. These benefits are likely to enhance the effectiveness of debt using, leading to higher profitability. As such, we propose that:

Hypothesis 2. *Board independence positively moderates the effect of debt financing on the profitability of public firms in emerging economies.*

The moderating effect of CEO duality

When the CEO is also a board chair which is referred to in the literature as CEO duality, this increases his/her power (Peng, 2004; Mandle et al., 2012). In emerging markets, the regulations relating to corporate governance and banking system are still at an early stage of establishment. This creates the chance for managers to manipulate the use of debt financing for their benefit at the cost of shareholders. The board of directors is the apex of the decision control system. Having CEO duality means that CEOs lead this decision control system, so likely harm the effectiveness of the control system (Yang & Zhao, 2014). The CEO duality gives CEO more

power and freedom in borrowing and using borrowed money in projects which may be not profitable for firms but may benefit her/himself. Meanwhile, having a separation of leadership is likely to result in better monitoring of CEO's decision associated with debt using, hence more effectiveness of debt and higher profitability. Therefore, we propose the following:

> **Hypothesis 3**. *CEO duality negatively moderates the effect of debt financing on the profitability of public firms in emerging economies.*

The moderating effect of CEO ownership.

Some governance features may be motivated by incentive-based models of managerial behaviour (Bhagat & Bolton, 2008). In emerging markets, the lack of transparent financial reporting system may enable managers to take actions that are costly to shareholders. Contracts cannot prevent this activity if shareholders are unable to observe managerial behaviour directly (Grossman and Hart, 1983). Due to different ability and also not always a transparent system, shareholders may not be able to observe fully and directly CEO behaviours in using debt financing. CEO ownership may prompt managers to act in a manner that is consistent with the interest of shareholders (Bhagat & Bolton, 2008). Providing CEOs with ownership incentives may encourage them to decide on debt usage in a way that maximises profitability because they have direct benefits from the firm's profitability. Thus, we propose:

> **Hypothesis 4**. *CEO ownership positively moderates the effect of debt financing on the profitability of public firms in emerging economies.*

The moderating effect of state ownership.

There has been much debate on the effect of government ownership on the performance of emerging market firms (Tran et al.,2015). In emerging markets, state ownership is supposed to bring a ‘helping hand’ but state ownership is also argued to bring a ‘grabbing hand’ which

exploit firm's profit to benefit corrupted politicians as a result of agency problem associated with state ownership. In short, state ownership brings both benefit and disadvantage, the net effect is likely to be subject to contextual factors.

However, our interest is not on the direct effect of state ownership but how state ownership influences the effectiveness of debt using. A 'helping hand' assumption is particularly applicable when an emerging market firm uses debt financing. In an emerging market like Vietnam, a government tends to give more support to its state-owned firms, particularly in term of giving lost cost loan. A firm with a higher proportion of state ownership is argued to obtain more capital subsidy and favourable business condition are provided by the government (Tian and Estrin, 2008). State ownership may enhance some investment opportunities for the firm (Le and O'Brien, 2010). With a high percentage of state ownership, the firm can access to better investment projects, obtain more low-cost loan and consequently enhance the profitability of investment projects made with borrowed money. Thus, we propose.

Hypothesis 5. *State ownership positively moderates the effect of debt financing on the profitability of public firms in emerging economies.*

Figure 1 illustrates our conceptual model. Control variables are to be discussed in more details in the research method section.

(Insert Figure 1 here)

3. Methodology

3.1.Empirical model

To evaluate our hypotheses, we developed an empirical model in which firm accounting profitability is a dependent variable; financial leverage, board size, board independence, CEO duality, CEO ownership, state ownership and the interaction variables are predictors.

We control for variables associated with the macro-economic environment, industry business environment and firm's characteristics.

GDP per capita. In general, GDP per capita of a country influences demand in one country and so affect the sale and profitability of firm operating in that country. Thus we control for GDP per capita.

Financial market development. The underdevelopment of legal and financial systems prevents firms from investing in potentially profitable growth opportunities (Demirgüç-Kunt & Maksimovic, 1998). Therefore, we control for financial market development.

A firm's industry. The industry is an essential part of the business environment which frames organisational competition strategies and practices and hence performance (Porter, 1980). Thus, we controlled for the industry to capture the industry effect.

Firm size. Firm size is a conventional predictor of a firm's performance because large firms can have a greater variety of capabilities which may positively influence performance (Williamson, 1967). Thus, firm size is included as a control variable in this study.

Based on the assumption that profitability of the current year is the outcomes of operation in the previous year (Jo and Harjoto, 2012; Bear *et al*. 2010), we developed the baseline model with the one-year lag of the predictors and control variables.

Equation 1 presents our baseline model.

$$Y_{i;t} = \alpha + \beta_1 DE_{i;t-1} + \beta_2 Boardsize + \beta_3 ID_{i;t-1} + \beta_4 CEODuality_{i;t-1} + \beta_5 CEOown_{i;t-1} + \beta_6 SO_{i;t-1} + \beta_7 Interactions_{i;t-1} + \beta_8 Firmsize_{i;t-1} + \beta_9 Industry_{i;t-1} + \beta_{10} GDPpercap_{t-1} + \beta_{11} Findep_{t-1} \quad \varepsilon_{i:t} \quad (1)$$

where for the *i*th firm at time t; α is the intercept, β is the regression coefficient, and ε is the error term.

$Y_{i;t}$ is the profitability of the *i*th firm at time t. Following the previous empirical literature (e.g. Le and O'Brien, 2010), we used the ratio of Return-on-Assets (ROA) and the ratio of Return-

on-Equity (ROE) to measure a firm's profitability. We measured the return as the earnings before interest and tax as done by Follow Le and O'Brien (2010). We extracted the information of a firm's earnings, assets and equity from a firm's financial annual report.

$ID_{i;t-1}$ is the percentage of independent directors on board of the *i*th firm at time t-1

$DE_{i;t-1}$ is Debt-to-Equity ratio of the *i*th firm at time t-1

$FIRMSIZE_{i;t-1}$ is the firm's size of the *i*th firm at time t-1, measured in terms of total asset value, and then normalized by a logarithm (lg.size);

$BOARDSIZE_{i;t-1}$ is the board size of the *i*th firm at time t-1, measured in terms number of people on board, and then normalised by a logarithm;

$CEODUALITY_{i;t-1}$ is to indicate the situation of CEO duality of the *i*th firm at time t-1. It is a dummy variable (equal to one (1) if the CEO and Chairperson posts are held by the same person, otherwise it is zero (0));

$CEOown_{i;t-1}$ is the percentage of shares owned by CEO of the *i*th firm at time t-1

$SO_{i;t-1}$ is a percentage of state ownership of the *i*th firm at time t-1.

$INDUSTRY_{i;t-1}$ is to indicate the industry the *i*th firm at time t-1. Following Le and O'Brien (2010), we measured it by median firm performance for each industry in each year.

$GDPpercap_{t-1}$ is GDP per capita of the country at time t-1

$Findep_{t-1}$ is Financial development index of the country at time t-1

$Interactions_{i;t-1}$ is an interaction variable used to evaluate the moderating effect of the five corporate governance factors. The method to calculate the interaction variables is as below.

To test the moderating effect, we examine the interaction variable which is the product of the moderating variable and moderated variable as suggested in the econometric literature

(Baron and Kenny, 1986; Aiken & West, 1991). When the moderating variable and moderated variable the moderating variable are continuous variables, we used the mean centred approach suggested by Aiken & West (1991) to calculate the interaction variable to eliminate the possibility of multicollinearity.

Interaction ID*DE= (DE - mean score of DE) * (IDs - mean score of IDs)

Interaction Boardsize*DE= (DE- mean score of DE) * (Boardsize - mean score of Boardsize)

Interaction CEOduality*DE= (DE - mean score of DE) * CEOduality

Interaction CEOown*DE= (DE - mean score of DE) * (CEOown - mean score of CEOown)

Interaction SO*DE= (DE - mean score of DE) * (SO - mean score of SO)

3.2. The data and research sample

Our research sample contains all firms listed on Vietnam's stock market (Ho Chi Minh Stock Exchange and Ha Noi Stock Exchange). For firm-level data, we extracted data from the audited financial statements from 2013 to 2017 of all the firms. By 2016, among 700 enterprises listed on the stock exchange, we excluded firms in the financial sector (e.g. banks, real estate, securities and insurance firms). The reason for this is that financial firms have distinctive corporate structures and revenue models, indicated by an extraordinary performance indicator (Le and O'Brien, 2010). After excluding the financial firms in the financial sector and firms with missing information, the final sample consists of 295 companies. The industries of the sample firms are outlined in Table A in the Appendix.

For financial development (FINDEP), we collect the data from the International Monetary Fund. For GDP per capita, we extract the data from the World Bank's World Development Indicators.

Treatment for reverse causality

To address the potential reverse causality between profitability and financial leverage by explicitly, we use a lag model as presented in Equation (1). Intuitively, this model helps to rule out the reverse causality because future events (i.e ROA) cannot cause the current conditions (i.e financial leverage). The profitability of the current year cannot be a determinant of the financial leverage of the year before. Empirically, we conducted an additional test to rule out the reverse causality explicitly. We tested a model with a different lag structure in which financial leverage is a dependent variable and lag one year of its predictor variables which are profitability and the other control variables used in Equation (1). The unreported model shows that current profitability is not a significant predictor of the previous year financial leverage.

Treatments for endogeneity

Firm growth is arguable to be a potential driver for a debt financing decision. To address the potential endogeneity problem of financial leverage associated with firm growth, we used firm sale growth of the two year lag as an IV for DE of the one year lag. We also employed firm growth as an IV for the interaction variables DE*Boardsize, DE*IDs, DE*CEOduality, DE*CEOownership and DE*stateownership. Drawn upon Wooldridge (2010), the two year lag firm growth meets two requirements of a good instrumental variable. This is because the two year lag firm growth is believed to have a strong effect on predicting variables - the one year lag DE (and the five interaction variables made from DE) but weak on the dependent variable- the current year profitability (ROA, ROE).

Empirically, to check if firm growth is a good IV, we conducted the Durbin (score) chi-sq test and Wu-Hausman F test of the endogeneity of DE, DE*Boardsize, DE*IDs, DE*CEOduality, DE*CEOownership and DE*stateownership when firm growth is in use as an IV respectively. The large P-values obtained from these tests show that the hypothesis of

exogenous regressor cannot be rejected. Moreover, the results of the Sargan (score) chi2 tests and Basmann chi2 tests ($p < 0.05$) demonstrate that our models have no overidentifying restrictions. Thus, the endogeneity issue of DE, DE*Boardsize, DE*IDs, DE*CEOduality, DE*CEOownership and DE*stateownership was addressed.

4. Findings

The descriptive statistics of the dataset and correlation matrix among variables are summarised in Table 2. The average total assets (firm size) is VND 1.21 trillion, equivalent to USD 53.30 million (22,700VND= 1USD). On average, the State has 36 percent stake in privatized firms. 28.5 percent of firms have a chairman who is also a CEO. The average Debt ratio is 0.181. The average board size is 5.417 people. The average proportion of IDs is 51.5 percent. The average Return-on-Asset is 6 percent. The average Return-on-Equity is 6.9 percent.

(Insert Table 2 here)

The testing results obtained from 2 SLS IV estimation method when DE*Boardsize, DE*IDs, DE*CEOduality take a turn to be an interaction variable are respectively presented in Table 3. The significant and positive effect of DE*Boardsize ($\beta = 0.036$, $p= 0.049$ for ROA and $\beta = 0.020$, $p= 0.019$ for ROE) indicates the moderating effect of board size on the financial leverage-profitability relation is significant and positive. So, Hypothesis 1 is accepted.

Regarding the significant and positive effect of DE*IDs ($\beta = 0.029$, $p= 0.020$ for ROA and $\beta =0.077$, $p= 0.034$ for ROE), this means that board independence has the significant and positive effect on the financial leverage-profitability relation. So, Hypothesis 2 is accepted.

Next, the results of an insignificant and negative effect of DE*CEOduality ($\beta =-0.009$, $p=0.112$ for ROA; $\beta =-0.077$, $p= 0.295$ for ROE) demonstrate that the effect of CEO duality on the financial leverage- profitability relation is insignificant although negative. Therefore, Hypothesis 3 is not supported.

(Insert Table 3 here)

Table 4 shows the testing results obtained from 2 SLS IV when DE*CEOownership and DE*stateownership are respectively examined in the regression model. The insignificant and positive effect of DE*CEOown (β = 0.053, p=0.113 for ROA; β =0.052, p=0.452 for ROE) means that the effect of CEO ownership on the financial leverage- profitability relation is insignificant (though positive). Hypothesis 4 is, then, not supported.

Finally, the results of a significant and positive effect of DE*SO (β = 0.078, p=0.033 for ROA; β = 0.285, p=0.005 for ROE) indicates that the effect of state ownership on the financial leverage- profitability relation is significant and positive. Therefore, Hypothesis 5 is supported.

(Insert Table 4 here)

For robustness check, we ran regressions of Equation 1, using GMM estimation method. The testing results obtained from GMM and presented in Table 5 and Table 6 show the consistency with the results reported in Table 3 and Table 4. This indicates that our results are robust.

(Insert Table 5 here)

(Insert Table 6 here)

5. Discussion

Our results show that debt financing tends to harm the profitability of listed firms in Vietnam. This finding is in line with other research that uses the data of emerging market firms such as Le and O'Brien's (2010) who use the data of Chinese listed firms. More notably, this result is consistent with that of Vo and Ellis (2017) who also use the data of Vietnamese firms but in the period (2007-2013) earlier than our research period. In a developed economy, debt has both costs and benefits which vary in accordance with the firm's strategy (Balakrishnan and Fox, 1993; Simerly and Li, 2000; O'Brien, 2003). However, in an emerging economy, debt financing is associated with high cost. This can be explained through the events occurring in Vietnam during the period of this research. During the period 2011-2015, the lending interest rate in

Vietnam was averagely 12% (Trading Economics, 2019). This high lending rate leads to high debt cost payment and reduces the profitability of public listed firm using high debt financing rate. Moreover, the immature law regime in Vietnam is ineffective in protecting the rights of debt holders and shareholders. For example, Vietnam's Law on Bankruptcy 2004 provides an ambiguous account for determining whether or not a certain company fails into insolvency. Those reasons should be clarified as objective (i.e. general economic conditions) or subjective (i.e. the company's own faults of investing in unfavourable projects or proposing wrong strategies). Consequently, the managers may capture those loopholes to manipulate the business operation, particularly the use of debts, and financial data to benefit their interests. Also, because it is easy to file a petition to commence bankruptcy procedures and the amount of bankrupt value is equally shared among shareholders according to their proportion of ownership, the managers may have a tendency to freely make investment decisions by using the debt-financed from outside sources. As a result, this negatively affects the performance of Vietnamese listed firms.

Given the use of debt financing is unavoidable in emerging markets; our findings show that corporate governance factors help to reduce the detrimental effect of debt financing on firm performance. In particular, our finding shows that a large board size enhances the effectiveness of debt using. A large board size brings more experience, skills, and knowledge; diverse background of management to deal with various business situations which enable Vietnamese firms to have a better financial outcome. This finding indicates the necessity to consider board size when studying the financial leverage- performance relation.

Our findings also indicate that a high level of board independence significantly reduces the negative effect of debt financing. This finding provides empirical evidence for the effectiveness of board independence in corporate governance in Vietnam. The previous literature on corporate governance in emerging markets provide inconsistent finding on the

direct effect of IDs on firm financial performance. This is possible because those studies only focused on the direct effect and did not consider the direct effect of board independence on firm financial performance through other corporate governance instruments such as capital structure. Our finding proves the necessity of board independence in Vietnam, especially when firms use a high level of debt financing. Board independence helps to monitor the effectiveness of debt usage, therefore, reduces the negative effect of debt financing on firm performance.

Our findings of the insignificant effect of CEO duality on the financial leverage-profitability relation suggest that the more power which CEO has does not cause them to be less prudent and inefficient in making debt use decision. Our findings associated with the roles of CEO ownership in the financial leverage-profitability relation suggest that ownership-based incentives do not enhance the efficiency of CEO debt use decision. These findings indicate that neither CEO power nor CEO ownership really matters to the effectiveness of debt use decisions of Vietnamese firms. Other corporate governance instruments like board size and board independence mentioned above are far more effective in monitoring the effectiveness of debt use decisions of Vietnamese firms.

Interestingly, our results provide empirical evidence for the positive role of state ownership in the financial leverage-profitability relation. This result is contradicted with the conventional perception about the role of state ownership. In Vietnam, state ownership has been regarded to be associated with inefficiency and agency problem leading to low profitability. Our findings support "helping hand" role of state ownership and disapprove the wide perception in Vietnam that firms with high state-ownership operate inefficiently and consequently generate low income.

6.Conclusion

Analysing the data of 295 public firms listed in stock markets in Vietnam for the period 2011-2015, we find the evidence for the significant and positive effect of board size, board independence and state ownership on the financial leverage - profitability relation. The effect CEO duality on the financial leverage - profitability relation is insignificant although it tends to be negative while the impact CEO ownership inclines to be positive but it is insignificant. Our results are consistent across different estimation methods.

Our paper makes some contributions to the literature. *First,* our paper shows that corporate governance mechanisms play useful roles in enhancing the effectiveness of debt use. While considerable work in management has examined the governance implications of financial leverage and the implications of various corporate governance factors; little research has considered corporate governance properties as mechanisms to accelerate the benefits and decelerate the adverse effect of debt on firm performance. *Second,* our study points out that the lack of consideration of corporate governance factors could be the reason for the inconsistent findings of the financial leverage- firm performance relations. Despite many studies on the effect of debt financing on firm performance, the results are inconclusive. O'Brien (2003) and Jermias (2008) explain the inconsistent findings in the prior empirical literature results are caused by the lack of consideration of situational and contingency factors. These factors need to be taken into account when examining the financial leverage- performance relation. Our work specifies which corporate governance mechanisms can influence on the financial leverage-performance relation.

We recommend public firms in emerging economies that when using debt financing, they should employ various corporate governance instruments such as using a more people on corporate board, using more independent directors to improve the benefits and reduce the cost of debt financing. Relying on state ownership may also be helpful to improve the efficiency of

debt financing because state ownership may give firm advantages in accessing low-cost loan and profitable investment opportunities. We also advise firms that CEO ownership is not an effective instrument to promote the efficiency of debt use while CEO duality does not really worsen the effectiveness of CEO's debt use decision.

We also recommend Vietnam's policymakers to conduct further reform of its capital market in order to address the challenges faced in debt financing. According to Vietnam National Financial Supervision Committee (2018), Vietnam's financial market reveals following major problems: (i) the credit system still plays a leading role in Vietnam's financial system; (ii) supplying capital from the banking sector accounts for a major proportion of the total capital supply for the economy; (iii) the market for corporate bond does not meet the standards of transparency because there is no organization of ratings; (iv) financial products are still primitive and lack of diversity; (v) the quality of information provision and transparency in the market is still far from the international standards; (iv) the legal framework for market activities is not complete. Therefore, to help Vietnamese firms reduce their reliance on debt financing as well as the negative effect of debt financing, policymakers should apply measures to address those above-mentioned problems, prompting further development of the capital market. More specifically, Vietnam's policymakers should strengthen coordination and information sharing among financial management and supervision agencies as well as enhance the supervision capacity of these agencies. Policymakers should also prioritise to improve risk management capacity at commercial banks, in accordance with international standards. By doing this, the commercial bank system can enhance efficiency, cutting their operation cost and so able to lower their lending interest rate to enterprises. This, in turn, helps firms to lower debt financing costs.

Our study has some limitations. *First,* different types of debt may affect firm performance in different ways while we did not disintegrate debt in the long term or short term

debt. So our conclusion relating to debt in general without distinguishing of short term or long term should be interpreted with caution. *Second,* it will be more significant if a future study conducts empirical tests on several emerging economies rather than focusing on the context of one emerging economy as we did in this research.

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Appendix

Table A: Industry-based classification of the sample

Industry	*Description*	*Observations (2011-2015)*
Industry 1	Agriculture, forestry and fishing	15
Industry 2	Mining and quarrying	85

Industry 3	Manufacturing	405
Industry 4	Electricity, Gas, Steam and Air Conditioning supply	115
Industry 5	Water supply	30
Industry 6	Construction	425
Industry 7	Wholesale and retail trade	155
Industry 8	Transportation and storage	100
Industry 9	Accommodation and food service activities	35
Industry 10	Information and communication	40
Industry 11	Professional, Scientific and technical activities	30
Industry 12	Administrative and supportive service	15
Industry 13	Arts, entertainment and recreation	25

Table 1. Correlation matrix

	ROA	ROE	DE	Bsize	ID	Duality	CEO own	SO	DE* Bsize	DE*ID	DE* Dual	DE* CEO own	DE*SO	Firsm size	GDP	Fin Dep	**VIF**
ROA	1																
ROE	0.150	1															
Debtratio	-0.010	-0.810	1														**1.12**
Boardsize	0.000	0.010	-0.013	1													**1.24**
ID	0.011	0.056	0.016	0.108	1												**1.12**
CEODuality	-0.029	-0.005	0.011	-0.026	-0.249	1											**1.46**
CEOown	-0.062	-0.004	0.002	0.005	-0.087	0.178	1										**1.98**
SO	-0.033	-0.006	-0.006	-0.231	-0.010	-0.171	-0.091	1									**1.27**
DE*Bsize	0.009	0.810	0.999	-0.002	0.017	0.011	0.002	-0.007	1								**1.27**
DE*ID	0.065	0.491	-0.882	0.015	0.038	-0.029	-0.002	0.013	-0.883	1							**1.69**
DE*Dual	-0.119	-0.038	0.037	-0.033	-0.150	0.482	0.095	-0.026	0.032	-0.014	1						**1.36**
DE*CEOown	0.012	-0.809	0.998	-0.011	0.012	0.019	0.049	-0.010	0.997	-0.880	0.044	1					**1.77**
DE*SO	0.008	0.760	0.964	-0.010	0.013	0.003	-0.006	0.067	0.971	-0.878	0.022	0.963	1				**1.14**
Firmsize	0.065	0.010	0.006	0.262	0.131	0.015	-0.067	0.036	0.008	-0.005	0.016	0.002	0.003	1			**1.12**
GDP	0.007	0.010	-0.030	0.037	0.104	-0.044	0.012	-0.016	-0.029	0.052	0.038	-0.030	-0.033	0.025	1		**1.06**
FinDep	0.057	0.006	-0.028	0.031	0.039	-0.002	-0.009	-0.010	-0.027	0.036	0.022	-0.031	-0.023	0.009	0.191	1	**1.04**

Table 2. Descriptive Statitic

Variable	Obs	Mean	Std. Dev	Min	Max
ROA	1450	0.060	0.082	-0.489	1.349
ROE	1450	0.069	0.103	-0.625	2.053
Debtratio	1450	0.181	0.019	0.000	0.740
Boardsize	1450	5.417	1.141	0.000	12.000
ID	1450	0.515	0.178	0.000	1.000
CEODuality	1450	0.285	0.451	0.000	1.000
CEOOwnership	1450	0.039	0.046	0.000	0.647
SO	1450	0.360	0.215	0.000	0.892
Firmsize	1450	1.210	2.850	0.005	30.100
GDP	1450	2111.974	160.637	1886.672	2365.622
FinDep	1450	0.180	0.027	0.150	0.210

Note: Firm size is measured by total asset in trillion VND; GDP is measured by GDP per capita in USD

Table 3: 2SLS IV regression results – The moderating roles of Board Size, Board Composition, and CEO Duality

	Board Size and Debt Ratio interaction				*Board Composition and Debt Ratio interaction*				*CEO Duality and Debt Ratio interaction*			
	ROA		ROE		ROA		ROE		ROA		ROE	
	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value
Lag DE	**-0.010**	**0.005**	**-0.161**	**0.007**	**-0.003**	**0.000**	**-0.057**	**0.000**	**-0.003**	**0.000**	**-0.054**	**0.000**
Lag Boardsize	**0.026**	**0.048**	**0.046**	**0.042**	0.002	0.036	0.017	0.021	0.002	0.045	0.015	0.037
Lag ID	0.009	0.588	0.201	0.644	**0.012**	**0.043**	**0.114**	**0.059**	0.015	0.036	-0.259	0.554
Lag CEODuality	0.011	0.098	0.058	0.745	0.011	0.097	0.059	0.742	**-0.027**	**0.001**	**-0.193**	**0.379**
Lag CEOown	-0.139	0.024	-0.673	0.690	-0.139	0.023	-0.715	0.342	-0.134	0.029	-0.654	0.699
Lag SO	-0.026	0.012	-0.075	0.043	-0.026	0.055	-0.074	0.844	-0.028	0.040	-0.042	0.910
Lag Interaction	**0.036**	**0.049**	**0.020**	**0.019**	**0.029**	**0.020**	**0.077**	**0.034**	**-0.009**	**0.122**	**-0.077**	**0.295**
Lag Firmsize	0.017	0.096	0.018	0.530	0.017	0.096	0.016	0.583	0.019	0.071	0.018	0.536
Lag Industry 1	0.095	0.098	1.660	0.292	0.100	0.080	1.763	0.262	0.093	0.002	1.787	0.255
Lag Industry 2	-0.097	0.145	-1.058	0.562	-0.096	0.148	-1.026	0.574	-0.089	0.178	-0.963	0.598
Lag Industry 3	0.316	0.090	1.440	0.779	0.340	0.070	1.200	0.816	0.415	0.027	2.475	0.633
Lag Industry 4	0.378	0.021	2.322	0.608	-0.375	0.022	-2.535	0.575	-0.364	0.026	-2.284	0.614
Lag Industry 5	0.101	0.001	-2.786	0.017	0.096	0.118	-2.749	0.105	0.101	0.098	-2.835	0.094
Lag Industry 6	0.316	0.263	1.458	0.851	0.306	0.277	1.637	0.833	0.280	0.318	1.123	0.885
Lag Industry 7	-0.065	0.736	-1.125	0.833	-0.088	0.651	-0.859	0.873	-0.169	0.386	-2.176	0.686
Lag Industry 8	-0.047	0.025	-0.592	0.019	-0.038	0.059	-0.775	0.095	0.027	0.900	0.052	0.993
Lag Industry 9	0.025	0.690	3.292	0.060	0.027	0.673	3.290	0.060	0.013	0.831	3.216	0.067
Lag Industry 10	-0.027	0.951	6.320	0.595	0.017	0.969	7.079	0.551	-0.001	0.999	7.647	0.519
Lag Industry 11	0.174	0.423	2.150	0.720	0.161	0.460	-2.318	0.699	0.201	0.352	-2.236	0.709
Lag Industry 12	0.068	0.198	1.293	0.377	0.070	0.190	1.403	0.337	0.059	0.264	1.299	0.375
Lag Industry 13	0.116	0.317	2.969	0.353	-0.113	0.330	3.010	0.346	-0.133	0.249	2.898	0.365
Lag GDPpercap	0.048	0.034	0.027	0.069	0.082	0.038	0.040	0.006	0.075	0.038	0.042	0.061
Lag Findep	0.142	0.241	0.520	0.909	0.129	0.436	0.567	0.901	0.081	0.026	1.259	0.784
Constant	-0.043	0.749	-0.779	0.033	-0.038	0.779	-0.948	0.798	-0.022	0.868	-1.133	0.759
R-Squared	0.132		0.113		0.124		0.101		0.109		0.098	
Prob > F	0.000		0.000		0.000		0.000		0.000		0.000	

Table 4: 2SLS IV regression results – The moderating roles of CEO Ownership and State Ownership

	CEO Ownership and Debt Ratio interaction				*State Ownership and Debt Ratio interaction*			
	ROA		ROE		ROA		ROE	
	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value
Lag DE	**-0.005**	**0.000**	**0.049**	**0.013**	**-0.003**	**0.000**	**-0.047**	**0.001**
Lag Boardsize	0.002	0.004	0.016	0.029	0.002	0.030	0.016	0.029
Lag ID	0.008	0.011	0.210	0.629	0.009	0.079	0.206	0.635
Lag CEODuality	-0.011	0.093	-0.059	0.742	-0.011	0.097	-0.050	0.776
Lag CEOown	**0.231**	**0.006**	**0.793**	**0.733**	0.140	0.023	0.678	0.007
Lag SO	-0.025	0.063	-0.062	0.037	**-0.027**	**0.072**	**-0.546**	**0.007**
Lag Interaction	**0.053**	**0.113**	**0.052**	**0.452**	**0.078**	**0.033**	**0.285**	**0.005**
Lag Firmsize	0.000	0.091	0.000	0.566	0.000	0.101	0.000	0.578
Lag Industry 1	0.097	0.090	1.826	0.245	0.098	0.086	1.601	0.307
Lag Industry 2	-0.093	0.162	-1.019	0.577	-0.096	0.149	-1.159	0.524
Lag Industry 3	0.319	0.087	1.693	0.742	0.322	0.084	1.177	0.818
Lag Industry 4	-0.380	0.021	-2.418	0.043	-0.379	0.021	-2.768	0.540
Lag Industry 5	0.104	0.091	-2.844	0.093	0.099	0.109	-2.486	0.141
Lag Industry 6	0.315	0.264	1.411	0.856	0.315	0.264	1.343	0.862
Lag Industry 7	-0.070	0.718	-1.353	0.800	-0.073	0.708	-0.064	0.990
Lag Industry 8	-0.049	0.818	-0.552	0.925	-0.046	0.829	-0.670	0.908
Lag Industry 9	0.018	0.773	3.310	0.060	0.027	0.676	3.030	0.083
Lag Industry 10	0.019	0.965	7.642	0.519	0.002	0.997	5.647	0.633
Lag Industry 11	0.168	0.439	-2.513	0.675	0.166	0.447	-1.661	0.781
Lag Industry 12	0.074	0.165	1.393	0.341	0.071	0.182	1.039	0.478
Lag Industry 13	-0.110	0.341	3.056	0.339	-0.113	0.329	2.625	0.411
Lag GDPpercap	0.011	0.052	0.042	0.010	0.080	0.031	0.023	0.049
Lag Findep	0.127	0.444	0.801	0.861	0.136	0.413	0.114	0.980
Constant	-0.034	0.801	-0.997	0.787	-0.037	0.782	-0.244	0.947
R-Squared	0.131		0.100		0.127		0.117	
Prob > F	0.000		0.000		0.000		0.000	

Table 5: GMM One Step Regression Results – The moderating roles of Board Size, Board Composition, and CEO Duality

	Board Size and Debt Ratio interaction				*Board Composition and Debt Ratio interaction*				*CEO Duality and Debt Ratio interaction*			
	ROA		ROE		ROA		ROE		ROA		ROE	
	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value
Lag Profitability	0.112	0.145	0.330	0.328	0.081	0.192	-0.140	0.452	0.118	0.169	0.090	0.552
Lag DE	**-0.001**	**0.006**	**-0.185**	**0.027**	**-0.002**	**0.000**	**-0.006**	**0.001**	**-0.002**	**0.000**	**-0.004**	**0.677**
Lag Boardsize	**0.002**	**0.027**	**0.041**	**0.535**	0.001	0.816	0.009	0.865	0.002	0.017	0.096	0.052
Lag ID	0.018	0.073	0.732	0.063	**0.024**	**0.048**	**0.947**	**0.002**	0.019	0.015	1.060	0.237
Lag CEODuality	-0.025	0.166	-0.175	0.025	-0.023	0.014	-0.286	0.261	**-0.005**	**0.086**	**-0.132**	**0.159**
Lag CEOown	-0.040	0.698	-1.804	0.341	0.044	0.656	0.819	0.447	0.045	0.033	1.128	0.025
Lag SO	-0.072	0.016	-0.015	0.091	-0.084	0.084	-1.384	0.014	-0.094	0.044	-0.962	0.061
Lag Interaction	**0.046**	**0.017**	**0.038**	**0.025**	**0.036**	**0.048**	**0.176**	**0.013**	**-0.005**	**0.487**	**-0.180**	**0.414**
Lag Firmsize	0.026	0.913	-0.024	0.557	0.054	0.819	0.016	0.052	0.010	0.045	-0.014	0.658
Lag GDPpercap	0.142	0.071	0.490	0.120	0.019	0.021	0.101	0.321	0.212	0.051	0.186	0.125
Lag Findep	1.394	0.302	10.479	0.664	1.408	0.278	16.955	0.183	1.614	0.223	17.376	0.489
Lag Industry 1	1.214	0.064	20.139	0.032	1.013	0.087	8.945	0.247	1.086	0.084	19.351	0.135
Lag Industry 2	-0.161	0.688	12.253	0.308	-0.084	0.830	-8.207	0.098	-0.228	0.553	-13.530	0.175
Lag Industry 3	1.141	0.085	-2.491	0.769	1.129	0.091	-1.233	0.814	1.132	0.187	-2.009	0.778
Lag Industry 4	0.043	0.958	9.136	0.732	0.078	0.921	8.677	0.304	0.163	0.844	9.425	0.730
Lag Industry 5	0.677	0.025	18.273	0.091	0.560	0.353	2.330	0.818	0.732	0.024	16.049	0.304
Lag Industry 6	0.904	0.308	-2.605	0.817	0.827	0.345	-2.512	0.530	0.898	0.309	-0.965	0.922
Lag Industry 7	-0.596	0.811	11.363	0.737	-0.747	0.758	11.607	0.672	0.159	0.952	8.855	0.840
Lag Industry 8	-0.723	0.036	-7.816	0.007	-0.568	0.037	-0.212	0.977	-0.800	0.032	-9.527	0.048
Lag Industry 9	0.208	0.245	12.856	0.242	0.110	0.515	2.779	0.381	0.281	0.154	13.162	0.364
Lag Industry 10	0.262	0.687	20.086	0.355	-0.040	0.936	-4.999	0.591	0.234	0.718	13.796	0.512
Lag Industry 11	0.066	0.878	-5.582	0.433	0.105	0.808	0.274	0.939	0.034	0.939	-2.377	0.609
Lag Industry 12	-0.124	0.029	-2.248	0.048	-0.103	0.047	-1.786	0.101	-0.086	0.027	-2.116	0.017
Lag Industry 13	-0.485	0.367	-7.447	0.118	-0.443	0.400	-5.891	0.140	-0.427	0.427	-7.380	0.084
Constant	-0.204	0.135	-1.669	0.246	-0.172	0.193	-1.216	0.327	-0.182	0.167	-3.062	0.221
AR(1)	0.195		0.223		0.195		0.051		0.203		0.073	
AR(2)	0.441		0.501		0.512		0.142		0.511		0.335	
Sargen Test	0.701		0.110		0.915		0.313		0.225		0.101	

Table 6: GMM One Step Regression Results – The moderating roles of CEO Ownership and State Ownership

	CEO Ownership and Debt Ratio interaction				*State Ownership and Debt Ratio interaction*			
	ROA		ROE		ROA		ROE	
	Coef.	P value	Coef.	P value	Coef.	P value	Coef.	P value
Lag Profitability	0.107	0.155	0.061	0.669	0.108	0.148	0.438	0.413
Lag DE	**-0.004**	**0.062**	**-0.038**	**0.039**	**-0.002**	**0.000**	**-0.043**	**0.426**
Lag Boardsize	0.001	0.015	0.087	0.023	0.002	0.005	0.030	0.081
Lag ID	0.040	0.006	1.025	0.097	0.009	0.080	0.431	0.053
Lag CEODuality	-0.027	0.126	-0.094	0.086	-0.022	0.217	-0.098	0.717
Lag CEOown	**0.099**	**0.025**	**0.043**	**0.981**	0.030	0.044	1.572	0.325
Lag SO	-0.090	0.082	-0.948	0.040	**-0.073**	**0.128**	**-0.160**	**0.030**
Lag Interaction	**0.503**	**0.314**	**0.978**	**0.182**	**0.002**	**0.031**	**0.376**	**0.026**
Lag Firmsize	0.063	0.082	0.022	0.058	0.000	0.729	0.000	0.923
Lag GDPpercap	0.194	0.059	0.277	0.153	0.012	0.434	0.090	0.734
Lag Findep	1.426	0.296	16.474	0.542	1.502	0.257	14.274	0.545
Lag Industry 1	1.190	0.062	20.968	0.104	1.086	0.083	14.457	0.269
Lag Industry 2	-0.171	0.669	-13.600	0.209	-0.179	0.654	-12.671	0.205
Lag Industry 3	1.141	0.192	-0.884	0.899	1.180	0.166	-1.592	0.828
Lag Industry 4	0.087	0.918	9.300	0.738	0.155	0.852	17.286	0.558
Lag Industry 5	0.655	0.280	15.089	0.340	0.669	0.268	15.053	0.178
Lag Industry 6	0.843	0.043	-1.943	0.847	0.822	0.030	-6.567	0.521
Lag Industry 7	-0.474	0.854	9.612	0.847	-0.098	0.969	15.496	0.748
Lag Industry 8	-0.702	0.041	-8.843	0.045	-0.669	0.048	-2.641	0.095
Lag Industry 9	0.248	0.215	12.937	0.385	0.188	0.308	10.679	0.309
Lag Industry 10	0.259	0.678	14.356	0.498	0.171	0.759	12.002	0.501
Lag Industry 11	0.100	0.818	-2.094	0.642	0.023	0.958	-6.343	0.385
Lag Industry 12	-0.101	0.056	-2.149	0.002	-0.114	0.098	-2.181	0.006
Lag Industry 13	-0.429	0.420	-7.516	0.076	-0.451	0.397	-6.827	0.020
Constant	-0.239	0.078	-2.912	0.187	-0.152	0.265	-0.454	0.803
AR(1)	0.197		0.099		0.197		0.105	
AR(2)	0.267		0.184		0.324		0.229	
Sargen Test	0.760		0.057		0.810		0.130	

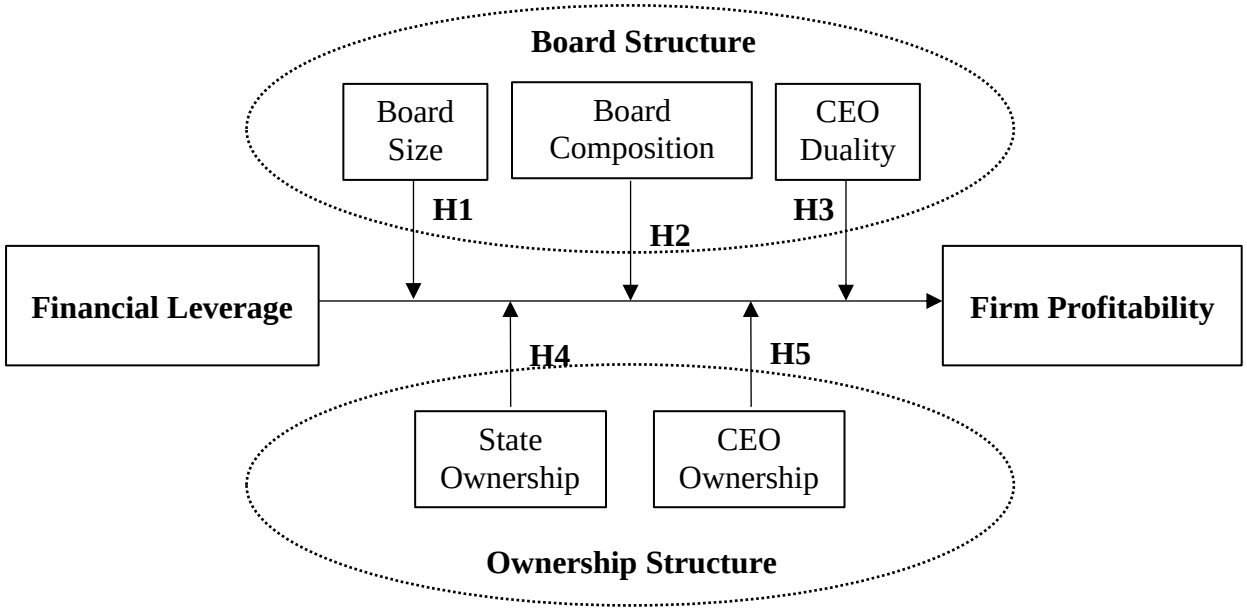

Figure 1: Conceptual Model